ABSTRACT

An apparatus and method for measuring the breakpoint of a response curve representing the voltage output of an image array having an extended dynamic range. By flooding a light-opaque pixel with a charge and then applying an intermediate reset voltage to the pixel, the signal is read from the pixel and stored. The full reset voltage is applied to the pixel, and then the signal in the pixel is read and stored. The voltage output difference is the difference between the first and second stored signal. The voltage output difference is then used to determine the voltage of the knee point. Further, a conventional saturated pixel can be reset with an intermediate reset just prior to readout. The resulting signal can then be used to determine the voltage of the knee point.